

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 05-208077

(43)Date of publication of application : 20.08.1993

(51)Int.Cl.

A63H 9/00
A63H 3/46
B29C 69/00
B29D 31/00
// B29L 31:52

(21)Application number : 03-360000

(71)Applicant : BANDAI CO LTD

(22)Date of filing : 27.12.1991

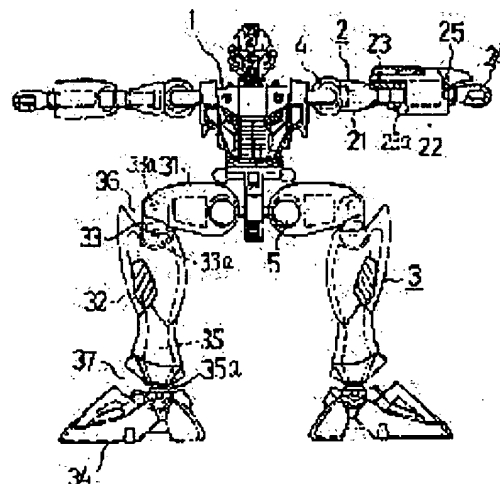
(72)Inventor : KITADE TAKAO
MIURA KAZUNORI

(54) MANUFACTURE OF PLASTIC DOLL

(57)Abstract:

PURPOSE: To provide a manufacturing method of a plastic doll in which the number of parts and assembly manhour are reduced drastically by integrally molding the parts which constitute joint parts in molding and carrying out integral molding in the connection state of a trunk part, arm part, leg part, etc., having the above-described integral molded part as insertion part.

CONSTITUTION: A manufacturing process for a plastic doll consists of the first molding process in which a trunk part 1 having spherical joint parts 4 and 5, intermediate joint shaft 23 having a hinge joint part 23a, hand part 24 having a spherical joint part 25, knee joint shaft 33 having each hinge joint part 33a at both the edges, and a leg joint part 35 having a spherical joint part 35a are integrally molded and the second molding process in which an arm part 2 is developed laterally for the trunk part 1, having the molded part as insertion part, and both the crotches of the leg part 3 are integrally molded, being pushing-spread laterally.



BEST AVAILABLE COPY

THIS PAGE BLANK (USPTO)

LEGAL STATUS

[Date of request for examination] 24.06.1993

[Date of sending the examiner's decision of rejection] 30.01.1996

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 2880345

[Date of registration] 29.01.1999

[Number of appeal against examiner's decision of rejection] 08-02810

[Date of requesting appeal against examiner's decision of rejection] 27.02.1996

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

THIS PAGE BLANK (USPTO)

CLAIMS

[Claim(s)]

[Claim 1] The manufacture approach of the doll toy which really fabricates a doll toy by the 1st forming cycle and 2nd forming cycle.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both sides, and equipped both ends with the hinge joint section.

(e) The foot joint shaft which is arranged at the knee-joint shaft bottom and has the globular form joint section in the lower part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the hinge joint section of another side of a knee-joint shaft, and some foot joint shafts.

(e) The foot of the right and left which insert the globular form joint section of a foot joint shaft.

[Claim 2] The manufacture approach of the doll toy which really fabricates a doll toy by the 1st forming cycle and 2nd forming cycle.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both sides, and equipped both ends with the hinge joint section.

(e) The foot of the right and left which are arranged at the knee-joint shaft bottom and have the globular form joint section in the upper part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the

hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the globular form joint section of the hinge joint section of another side of a knee-joint shaft, and a foot.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the manufacture approach of the doll toy by which has so much the Seki nodal character in which an arm and the leg can be crooked freely, respectively in a drum section, and connection formation is carried out in one.

[0002]

[Description of the Prior Art] Conventionally, the doll toy which enabled it to change a posture free was constituted by the appearance which can move a head, an arm, and the leg to a drum section free [crookedness] through a globular form joint, respectively so, respectively, and each component part was separated and was formed separately.

[0003]

[Problem(s) to be Solved by the Invention] However, since a globular form joint was constituted, the manufacture approach of the above-mentioned conventional doll toy needed to fabricate a drum section, a head and an arm, and the leg separately, respectively on the occasion of shaping, and these components fabricated separately were assembled by the bis-stop etc. one by one. Therefore, while components mark increased, the assembly was troublesome, and many man days started and had a fault, such as becoming cost quantity.

[0004] By inventing this invention in view of the above-mentioned trouble, really fabricating the components which constitute the joint section at the time of shaping, and really fabricating in the connected form, without separating an arm, the leg, etc. so much to a drum section by making this into insertion components next Components mark and an assembly man day are reduced sharply, and it aims at offering the manufacture approach of a doll toy of really fabricating the possible doll toy of posture change, and manufacturing it.

[0005]

[Means for Solving the Problem] The manufacture approach of the doll toy concerning this invention has the following process in order to attain the above-mentioned purpose.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both

sides, and equipped both ends with the hinge joint section.

(e) The foot joint shaft which is arranged at the knee-joint shaft bottom and has the globular form joint section in the lower part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the hinge joint section of another side of a knee-joint shaft, and some foot joint shafts.

(e) The foot of the right and left which insert the globular form joint section of a foot joint shaft.

You may have the following process, in order to attain the above-mentioned purpose furthermore.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both sides, and equipped both ends with the hinge joint section.

(e) The foot of the right and left which are arranged at the knee-joint shaft bottom and have the globular form joint section in the upper part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the globular form joint section of the hinge joint section of another side of a knee-joint shaft, and a foot.

[0006]

[Function] In the 1st forming cycle of the above, the component part containing the globular form section which constitutes each joint section of a doll toy is arranged in the developed form at the position of a die, and these component parts can really be fabricated at the time of shaping. Next, in the 2nd forming cycle, the component part by the above-mentioned shaping is set to other dice as insertion components in one, the melting point is lower than this component part, and secondary forming by insertion is performed by the material with the large rate of a heat shrink. In these forming cycles, while an arm is developed so much by right and left at a drum section, all component

parts can be arranged in the form superficially developed to the parting surface of a die by being formed in the form where both the crotches of the leg were pushed open by right and left. By this arrangement, each component part becomes possible [fabricating with the die of half cut], and, moreover, the necessary notching gap for obtaining the movement range of each component part can also be formed easily. Of this forming cycle, the mold goods picked out from the 2nd die are really formed so much in a drum section in the form which stood in a row through the component part fabricated by the 1st forming cycle of the above, without separating an arm, the leg, etc., and can be taken out as a doll toy by it. Components mark and an assembly man day are sharply reducible with this.

[0007]

[Example] When this invention is explained based on one example shown in drawing below, drawing 1 shows the condition that shaping of a doll toy was completed. 1 of this drawing is the drum section of a doll toy, and an arm 2 and the leg 3 attain to this drum section 1 globular form joint section 4 so much, respectively. Connection formation is carried out in one with the globular form joint section 5, and, as for each arm 2, connection formation of the overarm section 21 and the bottom arm 22 is carried out through the middle joint shaft 23 of hinge structure, respectively. Connection formation of the bottom arm 22 and the hand part 24 is carried out with the globular form joint section 25, similarly, connection formation of the upper leg 31 and the leg section 32 is carried out through the knee-joint shaft 33 of hinge structure, respectively, and, as for the leg 3, connection formation of the leg section 32 and the foot 34 is carried out with globular form joint section 35a. Moreover, while an arm 2 is linearly developed so much by right and left at the above-mentioned drum section 1 and the upper leg 31 and the leg section 32 of the leg 3 are bent by the right angle by the knee region, both crotches are pushed open by just beside [right-and-left], and the foot 34 is formed in the form turned horizontally.

[0008] It turns out that it is arranged in the form developed on the flat surface, without a drum section 1, the middle joint shaft 23, a hand 24, the knee-joint shaft 33, and the foot joint shaft 35 lapping so that clearly from the configuration of the above-mentioned component part. A deer is carried out, and these component parts are developed and arranged on the parting line of the die of half cut, and can really be cast as insertion components in the 1st forming cycle. Furthermore, since the upper leg 31 and the leg section 32 of the above-mentioned leg 2 are bent by the right angle by the knee region and a foot 34 is formed in the form turned horizontally To a doll, as hinge joint section 33a of the knee-joint shaft 33 projects in a cross direction, it can fabricate to it. The notching gap 37 for obtaining the movable range needed for the notching gap 36 for obtaining the movable range needed for a knee region bending and extending and crookedness of an ankle can be easily formed on a flat surface. The above-mentioned doll toy is fabricated in the form which stood in a row through each component part in the 2nd forming cycle with one molding of each component part as insertion components by secondary molding by the die of half cut by this, and each part article can really be fabricated as a doll toy, without being separated.

[0009] Drawing 2 is what shows an example of the die used in the 1st forming cycle and 2nd forming cycle of the above-mentioned doll toy. In this case, a drum section 1, the middle joint shaft 23, a hand part 24, the knee-joint shaft 33, and the foot joint shaft 35

are begun, and four dice A, B, C, and D are arranged centering on the shaft a1 in this cardiac location as a die of the arm 2 containing the components of three sorts of different colors, and the leg 3. These dice can rotate each shaping components 90 degrees centering on a shaft a1 at the time of shaping, and can really be fabricated continuously and correctly by transporting to the following mold and carrying out insert molding one by one. That is, in the 1st forming cycle, the middle joint shaft 23 which has the drum section 1 and hinge joint section 23a which have the globular form joint sections 4 and 5, the hand part 24 which has the globular form joint section 25, the knee-joint shaft 33 which has hinge joint section 33a to both ends, and the foot joint shaft 35 which has globular form joint section 35a are really formed in the die A of above-mentioned drawing 2. In the 2nd forming cycle The globular form joint section 4 of *****, and some middle joint shafts 23 The overarm section 21 of the right and left to insert, the bottom arm 22 of the right and left which insert the globular form joint section 25 of hinge joint section 23a of the middle joint shaft 23, and a hand part 24, the globular form joint section 5 of the lumbar part, and the upper leg 31 of the right and left which insert one hinge joint section 33a of the knee-joint shaft 33, The foot 34 of the right and left which insert hinge joint section 33a of another side of the knee-joint shaft 33 and globular form joint section 35a of the leg section 32 of the right and left which insert some foot joint shafts 35, and the foot joint shaft 35 is really fabricated, and a doll toy is formed. In the example, the shaping components A1 fabricated by the 1st forming cycle rotate 90 degrees centering on a shaft a1 in the form where each part material was connected, and turn into shaping components B1 like drawing 3 by being transported into the following die B and performing insert molding. Similarly this shaping component B1 rotates 90 degrees centering on a shaft a1, and turns into shaping components C1 like drawing 4 by being transported into the following die C and performing insert molding of the part of different colors. Thus, in the 2nd forming cycle, the fabricated components C1 can be rotated 90 degrees centering on a shaft a1, and can be taken out as a doll toy like above-mentioned drawing 1 by being transported into the following die D and performing insert molding to the above-mentioned drum section 1, an arm 2, and the leg 3.

[0010] Since connection formation of an arm 2 and the leg 3 is carried out so much at the drum section 1 through the joint shafts 23 and 33 which have the globular form joint sections 4, 5, and 25 and the hinge joint section, the doll toy constituted as mentioned above can be returned to the posture into which these arms 2 and the leg 3 were bent, and usual [like drawing 5] stood straight, and also it can be held into the posture of arbitration by making each joint section crooked.

[0011]

[Effect of the Invention] According to the manufacture approach of the doll toy of this invention, in the 1st forming cycle, the component part containing the globular form section which constitutes each joint section can really be fabricated at the time of shaping as mentioned above. In the 2nd forming cycle, although secondary forming is performed in one as insertion components, this component part By being formed in the form where both the crotches of the leg were pushed open by right and left, while an arm is developed so much by right and left at a drum section at the time of this shaping It can arrange in the form which developed superficially the component part which constitutes all the joint sections to the parting surface of a die, and it becomes possible to fabricate with the die of half cut. And the necessary notching gap for obtaining the movement range of each

component part can also be formed easily. While the mold goods picked out from the die of the 2nd forming cycle are really formed so much in a drum section in the form which stood in a row through the component part by which insert molding is carried out, without separating an arm, the leg, etc., being able to take out as a doll toy and reducing components mark by this compared with the manufacture approach of the conventional doll toy, an assembly man day is sharply reducible.

TECHNICAL FIELD

[Industrial Application] This invention relates to the manufacture approach of the doll toy by which has so much the Seki nodal character in which an arm and the leg can be crooked freely, respectively in a drum section, and connection formation is carried out in one.

PRIOR ART

[Description of the Prior Art] Conventionally, the doll toy which enabled it to change a posture free was constituted by the appearance which can move a head, an arm, and the leg to a drum section free [crookedness] through a globular form joint, respectively so, respectively, and each component part was separated and was formed separately.

EFFECT OF THE INVENTION

[Effect of the Invention] According to the manufacture approach of the doll toy of this invention, in the 1st forming cycle, the component part containing the globular form section which constitutes each joint section can really be fabricated at the time of shaping as mentioned above. In the 2nd forming cycle, although secondary forming is performed in one as insertion components, this component part By being formed in the form where both the crotches of the leg were pushed open by right and left, while an arm is developed so much by right and left at a drum section at the time of this shaping It can arrange in the form which developed superficially the component part which constitutes all the joint sections to the parting surface of a die, and it becomes possible to fabricate with the die of half cut. And the necessary notching gap for obtaining the movement range of each component part can also be formed easily. While the mold goods picked out from the die of the 2nd forming cycle are really formed so much in a drum section in the form which stood in a row through the component part by which insert molding is carried out, without separating an arm, the leg, etc., being able to take out as a doll toy and reducing components mark by this compared with the manufacture approach of the conventional doll toy, an assembly man day is sharply reducible.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, since a globular form joint was constituted, the manufacture approach of the above-mentioned conventional doll toy needed to fabricate a drum section, a head and an arm, and the leg separately, respectively on the occasion of shaping, and these components fabricated separately were

assembled by the bis-stop etc. one by one. Therefore, while components mark increased, the assembly was troublesome, and many man days started and had a fault, such as becoming cost quantity.

[0004] By inventing this invention in view of the above-mentioned trouble, really fabricating the components which constitute the joint section at the time of shaping, and really fabricating in the connected form, without separating an arm, the leg, etc. so much to a drum section by making this into insertion components next Components mark and an assembly man day are reduced sharply, and it aims at offering the manufacture approach of a doll toy of really fabricating the possible doll toy of posture change, and manufacturing it.

MEANS

[Means for Solving the Problem] The manufacture approach of the doll toy concerning this invention has the following process in order to attain the above-mentioned purpose.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both sides, and equipped both ends with the hinge joint section.

(e) The foot joint shaft which is arranged at the knee-joint shaft bottom and has the globular form joint section in the lower part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the hinge joint section of another side of a knee-joint shaft, and some foot joint shafts.

(e) The foot of the right and left which insert the globular form joint section of a foot joint shaft.

You may have the following process, in order to attain the above-mentioned purpose furthermore.

(b) The 1st forming cycle which fabricates the following component part.

(a) The drum section which has the shoulder globular form joint section and the lumbar part globular form joint section right and left.

(b) The hand part of the right and left which are arranged on both sides of a drum section at both sides, and have the globular form joint section in a drum section side. (c) It is arranged between the shoulder globular form joint section and the globular form joint

section of a hand part, and is hinge Seki to a hand part side. Middle joint shaft of the right and left equipped with the knot section.

(d) The knee-joint shaft which has been arranged on both sides of a drum section at both sides, and equipped both ends with the hinge joint section.

(e) The foot of the right and left which are arranged at the knee-joint shaft bottom and have the globular form joint section in the upper part.

(b) The 2nd forming cycle which fabricates the following component part.

(a) The overarm section of the right and left which insert the shoulder globular form joint section and some middle joint shafts.

(b) Bottom arm of the right and left which insert the globular form joint section of the hinge joint section of a middle joint shaft, and a hand part.

(c) The upper leg of the right and left which insert the lumbar part globular form joint section and one hinge joint section of a knee-joint shaft.

(d) The leg section of the right and left which insert the globular form joint section of the hinge joint section of another side of a knee-joint shaft, and a foot.

OPERATION

[Function] In the 1st forming cycle of the above, the component part containing the globular form section which constitutes each joint section of a doll toy is arranged in the developed form at the position of a die, and these component parts can really be fabricated at the time of shaping. Next, in the 2nd forming cycle, the component part by the above-mentioned shaping is set to other dice as insertion components in one, the melting point is lower than this component part, and secondary forming by insertion is performed by the material with the large rate of a heat shrink. In these forming cycles, while an arm is developed so much by right and left at a drum section, all component parts can be arranged in the form superficially developed to the parting surface of a die by being formed in the form where both the crotches of the leg were pushed open by right and left. By this arrangement, each component part becomes possible [fabricating with the die of half cut], and, moreover, the necessary notching gap for obtaining the movement range of each component part can also be formed easily. Of this forming cycle, the mold goods picked out from the 2nd die are really formed so much in a drum section in the form which stood in a row through the component part fabricated by the 1st forming cycle of the above, without separating an arm, the leg, etc., and can be taken out as a doll toy by it. Components mark and an assembly man day are sharply reducible with this.

EXAMPLE

[Example] When this invention is explained based on one example shown in drawing below, drawing 1 shows the condition that shaping of a doll toy was completed. 1 of this drawing is the drum section of a doll toy, and an arm 2 and the leg 3 attain to this drum section 1 globular form joint section 4 so much, respectively. Connection formation is carried out in one with the globular form joint section 5, and, as for each arm 2, connection formation of the overarm section 21 and the bottom arm 22 is carried out through the middle joint shaft 23 of hinge structure, respectively. Connection formation

of the bottom arm 22 and the hand part 24 is carried out with the globular form joint section 25, similarly, connection formation of the upper leg 31 and the leg section 32 is carried out through the knee-joint shaft 33 of hinge structure, respectively, and, as for the leg 3, connection formation of the leg section 32 and the foot 34 is carried out with globular form joint section 35a. Moreover, while an arm 2 is linearly developed so much by right and left at the above-mentioned drum section 1 and the upper leg 31 and the leg section 32 of the leg 3 are bent by the right angle by the knee region, both crotches are pushed open by just beside [right-and-left], and the foot 34 is formed in the form turned horizontally.

[0008] It turns out that it is arranged in the form developed on the flat surface, without a drum section 1, the middle joint shaft 23, a hand 24, the knee-joint shaft 33, and the foot joint shaft 35 lapping so that clearly from the configuration of the above-mentioned component part. A deer is carried out, and these component parts are developed and arranged on the parting line of the die of half cut, and can really be cast as insertion components in the 1st forming cycle. Furthermore, since the upper leg 31 and the leg section 32 of the above-mentioned leg 2 are bent by the right angle by the knee region and a foot 34 is formed in the form turned horizontally To a doll, as hinge joint section 33a of the knee-joint shaft 33 projects in a cross direction, it can fabricate to it. The notching gap 37 for obtaining the movable range needed for the notching gap 36 for obtaining the movable range needed for a knee region bending and extending and crookedness of an ankle can be easily formed on a flat surface. The above-mentioned doll toy is fabricated in the form which stood in a row through each component part in the 2nd forming cycle with one molding of each component part as insertion components by secondary molding by the die of half cut by this, and each part article can really be fabricated as a doll toy, without being separated.

[0009] Drawing 2 is what shows an example of the die used in the 1st forming cycle and 2nd forming cycle of the above-mentioned doll toy. In this case, a drum section 1, the middle joint shaft 23, a hand part 24, the knee-joint shaft 33, and the foot joint shaft 35 are begun, and four dice A, B, C, and D are arranged centering on the shaft a1 in this cardiac location as a die of the arm 2 containing the components of three sorts of different colors, and the leg 3. These dice can rotate each shaping components 90 degrees centering on a shaft a1 at the time of shaping, and can really be fabricated continuously and correctly by transporting to the following mold and carrying out insert molding one by one. That is, in the 1st forming cycle, the middle joint shaft 23 which has the drum section 1 and hinge joint section 23a which have the globular form joint sections 4 and 5, the hand part 24 which has the globular form joint section 25, the knee-joint shaft 33 which has hinge joint section 33a to both ends, and the foot joint shaft 35 which has globular form joint section 35a are really formed in the die A of above-mentioned drawing 2 . In the 2nd forming cycle The globular form joint section 4 of *****, and some middle joint shafts 23 The overarm section 21 of the right and left to insert, the bottom arm 22 of the right and left which insert the globular form joint section 25 of hinge joint section 23a of the middle joint shaft 23, and a hand part 24, the globular form joint section 5 of the lumbar part, and the upper leg 31 of the right and left which insert one hinge joint section 33a of the knee-joint shaft 33, The foot 34 of the right and left which insert hinge joint section 33a of another side of the knee-joint shaft 33 and globular form joint section 35a of the leg section 32 of the right and left which insert

some foot joint shafts 35, and the foot joint shaft 35 is really fabricated, and a doll toy is formed. In the example, the shaping components A1 fabricated by the 1st forming cycle rotate 90 degrees centering on a shaft a1 in the form where each part material was connected, and turn into shaping components B1 like drawing 3 by being transported into the following die B and performing insert molding. Similarly this shaping component B1 rotates 90 degrees centering on a shaft a1, and turns into shaping components C1 like drawing 4 by being transported into the following die C and performing insert molding of the part of different colors. Thus, in the 2nd forming cycle, the fabricated components C1 can be rotated 90 degrees centering on a shaft a1, and can be taken out as a doll toy like above-mentioned drawing 1 by being transported into the following die D and performing insert molding to the above-mentioned drum section 1, an arm 2, and the leg 3.

[0010] Since connection formation of an arm 2 and the leg 3 is carried out so much at the drum section 1 through the joint shafts 23 and 33 which have the globular form joint sections 4, 5, and 25 and the hinge joint section, the doll toy constituted as mentioned above can be returned to the posture into which these arms 2 and the leg 3 were bent, and usual [like drawing 5] stood straight, and also it can be held into the posture of arbitration by making each joint section crooked.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the front view showing a doll toy example manufactured by the manufacture approach of this invention.

[Drawing 2] It is the important section top view showing an example of the die by the manufacture approach of the doll toy of this invention.

[Drawing 3] It is the front view showing the condition of the forming process by the manufacture approach of the doll toy of this invention.

[Drawing 4] It is the front view showing the condition of the forming process by the manufacture approach of the doll toy of this invention.

[Drawing 5] It is a front view in the condition of having changed the posture of the doll toy by the manufacture approach of this invention.

[Description of Notations]

1 Drum Section

2 Arm

3 Leg

4 Globular Form Joint Section (Shoulder Globular Form Joint Section)

5 Globular Form Joint Section (Lumbar Part Globular Form Joint Section)

21 Overarm Section

22 Bottom Arm

23 Middle Joint Shaft

23a Hinge joint section

24 Hand Part

25 Globular Form Joint Section

31 Upper Leg

32 Leg Section

33 Knee-Joint Shaft

33a Hinge joint section

34 Foot

35 Foot Joint Shaft

35a Globular form joint section

THIS PAGE BLANK (USPTO)

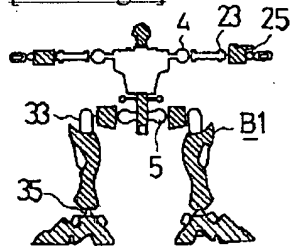
* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

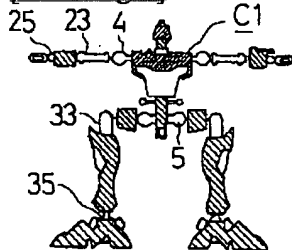
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

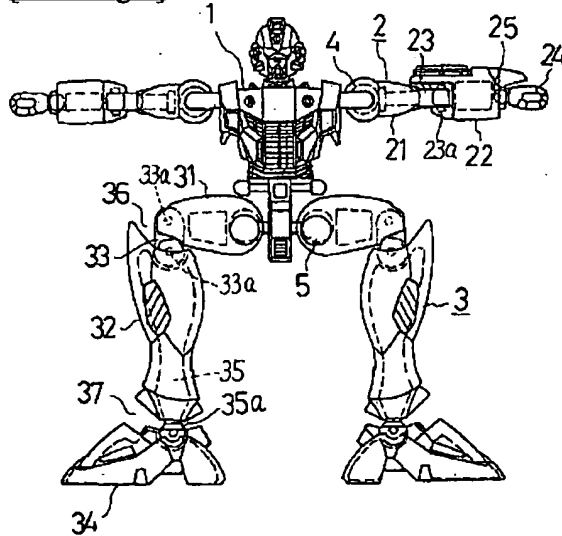
[Drawing 3]



[Drawing 4]



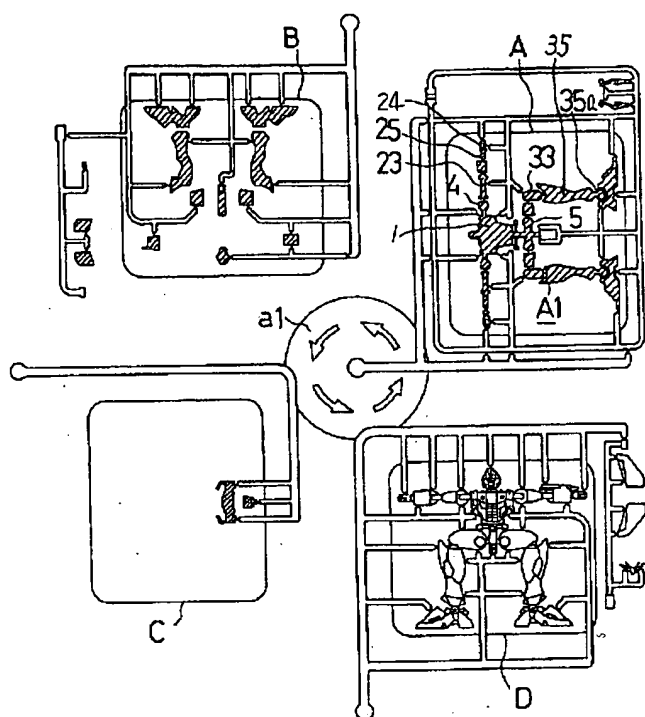
[Drawing 1]



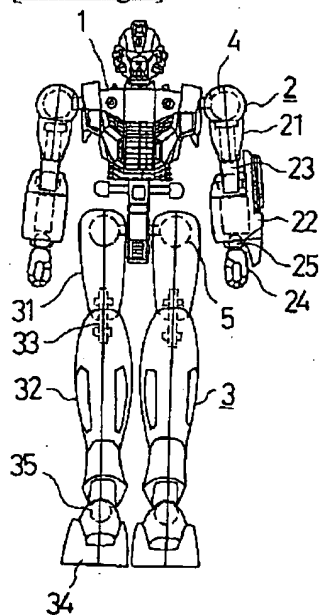
[Drawing 2]

BEST AVAILABLE COPY

THIS PAGE BLANK (USPTO)



[Drawing 5]



[Translation done.]

THIS PAGE BLANK (USPTO)